

5 2-mercaptoethanol (EDS), linker Gramicidin B, membrane spanning  
6 lipid C (MSL-C) and membrane spanning lipid D (MSL-D) [or other  
7 suitable linker molecules and other ion channel or ionophore com-  
8 binations], wherein the ratio of Linker Lipid A to the disulfide  
9 of mercaptoacetic acid (MAAD) or 2-mercaptoethanol (EDS) is 2:1,  
10 the ratio of Linker Lipid A + MAAD or EDS to MSL-D is in the  
11 range of 10:1 to 100:1, and the ratio of Linker Lipid A + MAAD or  
12 EDS to MSL-C is between 20,000:1 and 100:1;

13 (2) Contacting an electrode containing a clean  
14 gold surface with the solution, the disulfide containing  
15 components in the solution thus absorbing onto the gold surface  
16 of the electrode;

17 (3) Rinsing the electrode with a suitable organic  
18 solvent; and

19 (4) Removing the excess organic solvent used for  
20 rinsing.

Please delete claims 2-5 and 7.

1 ~~7~~ 13. (Amended) A method of producing a monolayer  
2 electrode membrane comprising:-

3 (1) Forming a solution containing the disulfide of  
4 mercaptoacetic acid (MAAD) [or similar molecule] or 2-  
5 mercaptoethanol (EDS), membrane spanning lipid C (MSL-C) and/or  
6 membrane spanning lipid D (MSL-D) and, optionally, Linker Lipid  
7 A, linker Gramicidin B [or other suitable linker molecules and

8 other ion channel combinations];

9 (2) Contacting an electrode containing a clean  
10 gold surface with the solution, the disulfide [containing  
11 components] of mercaptoacetic acid (MAAD) or 2-mercaptoethanol  
12 (EDS) in the solution thus absorbing onto the gold surface of the  
13 electrode;

14 (3) Rinsing the electrode with a suitable organic  
15 solvent; and

16 (4) Removing the excess organic solvent used for  
17 rinsing , wherein the solution in step (1) contains more than a  
18 molar % of 50% of a membrane spanning lipid.

1 <sup>14</sup> 14. (Amended) A method according to claim <sup>7</sup> 13, wherein  
2 the solution in step (1) contains more than a molar % of [70% of  
3 a membrane spanning lipid] 70% of membrane spanning Lipid C  
4 and/or membrane spanning Lipid D, 29% MAAD or 2-mercaptoethanol  
5 (EDS) and 1% other membrane spanning lipids.

1 <sup>12</sup> 18. (Twice Amended) A method according to [any one of  
2 claims] claim 13, [wherein MAAD, or similar spacer molecule, such  
3 as EDS] wherein the disulfide of mercaptoacetic acid (MAAD) or 2-  
4 mercaptoethanol (EDS) is covalently linked to the membrane  
5 spanning lipids C or D.

1 <sup>13</sup> 19. (Twice Amended) A method according to [any one of